

January 21st, 2022

KEY TAKEAWAYS

- Omicron is causing an unprecedented number of cases and placing severe strain on Virginia's hospitals, doctors, and nurses.
- Confirmed case growth is slowing or declining in some states and in some regions of Virginia. While promising, difficulties with case ascertainment make these trends difficult to confirm.
- While the Omicron surge is likely to peak statewide soon, case levels will remain high for several weeks after the peak, and rural areas may be affected later.
- Vaccination is the best protection against severe disease, and death. Get vaccinated and boosted when eligible.
- The Governor's Office has announced its [COVID-19 Action Plan](#).

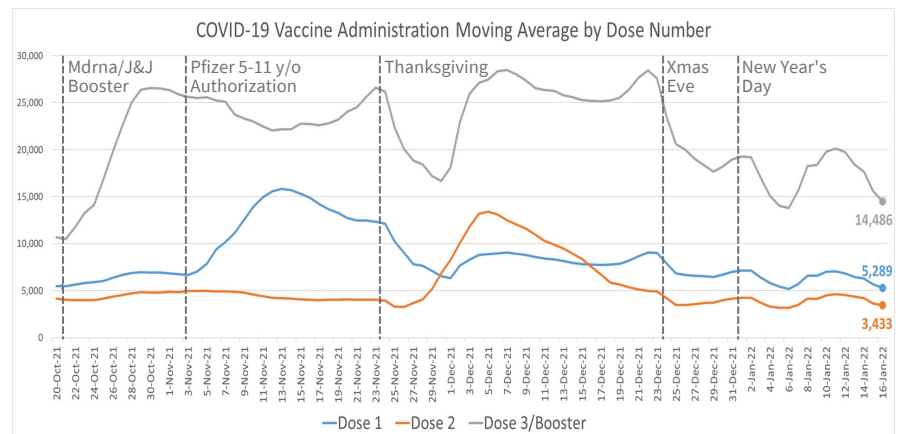
209 per 100kAverage Daily Cases
Week Ending Jan. 16, 2022**355 per 100k**Adaptive (new) Scenario
Forecast Average Daily
Cases, Week Ending
on Jan. 30, 2022**5,289 / 3,433**Average Daily 1st / 2nd Doses
Jan. 16, 2022**14,486**Average Daily Boosters
Jan. 16, 2022

KEY FIGURES

Reproduction Rate
(Based on Confirmation Date)

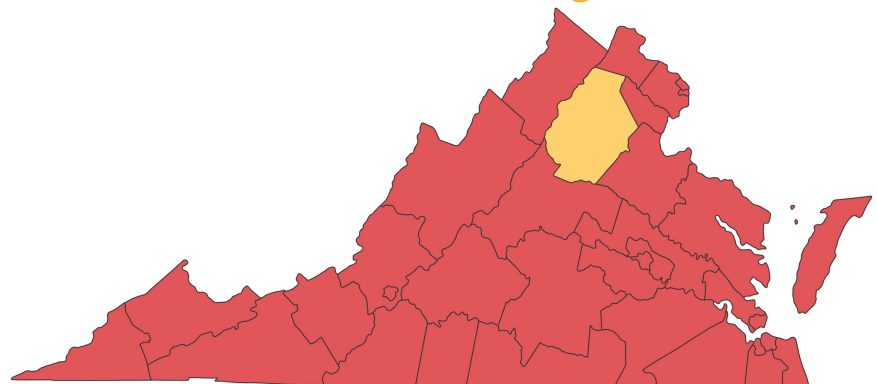
Region	R_e Jan. 17th	Weekly Change
Statewide	0.961	-0.121
Central	0.955	-0.093
Eastern	0.978	-0.151
Far SW	1.135	0.017
Near SW	1.072	-0.082
Northern	0.870	-0.168
Northwest	0.983	-0.127

Vaccine Administrations



Growth Trajectories: 34 Health Districts in Surge

Status	# Districts (prev week)
Declining	0 (0)
Plateau	0 (0)
Slow Growth	1 (0)
In Surge	34 (35)



THE MODEL

The UVA COVID-19 Model and these weekly results are provided by the UVA Biocomplexity Institute, which has over 20 years of experience crafting and analyzing infectious disease models. It is a county-level **Susceptible, Exposed, Infected, Recovered** (SEIR) model designed to evaluate policy options and provide projections of future cases based on the current course of the pandemic. The Institute is also able to model alternative scenarios to estimate the impact of changing health behaviors and state policy.

COVID-19 is a novel virus, and the variant mix changes constantly. The model improves as we learn more.

THE SCENARIOS

Updated: The models use various scenarios to explore the path the pandemic is likely to take under differing conditions. As the [CDC now estimates](#) that the Omicron variant represents >99% of all new cases in Virginia, all prior Delta variant scenarios have been retired. All current scenarios are based on the immune escape and transmission profiles of the Omicron variant. As before, models use [COVIDcast](#) surveys to estimate county-level vaccine acceptance. They then assume that vaccination uptake continues steadily in each county until this value is reached and 40% of vaccinated individuals receive a booster.

The new "**Adaptive**" scenario assumes that Omicron is as transmissible as Delta but adds an immune escape of 80%. This represents the current course of the pandemic and assumes that there will be no significant changes in interventions or transmission rates in the near future. Note that this scenario was called "Adaptive-Omicron" until last week.

In 2021, we saw a rapid decline in cases in Spring, possibly as a result of changing weather or decreased travel. What would it look like if we followed the same trajectory this year? The "**Adaptive-Spring**" scenario is meant to explore this. In this scenario, transmission rates from now until mid-March 2022 are manually set to reflect the falling transmission rates from the same time last year, then boosted by Omicron's enhanced transmissibility and immune escape.

The "**Adaptive-DecreaseControl**" scenario explores the effects of a hypothetical increase in transmission rates. This scenario is meant to demonstrate that continued vigilance remains important despite Omicron's milder illness.

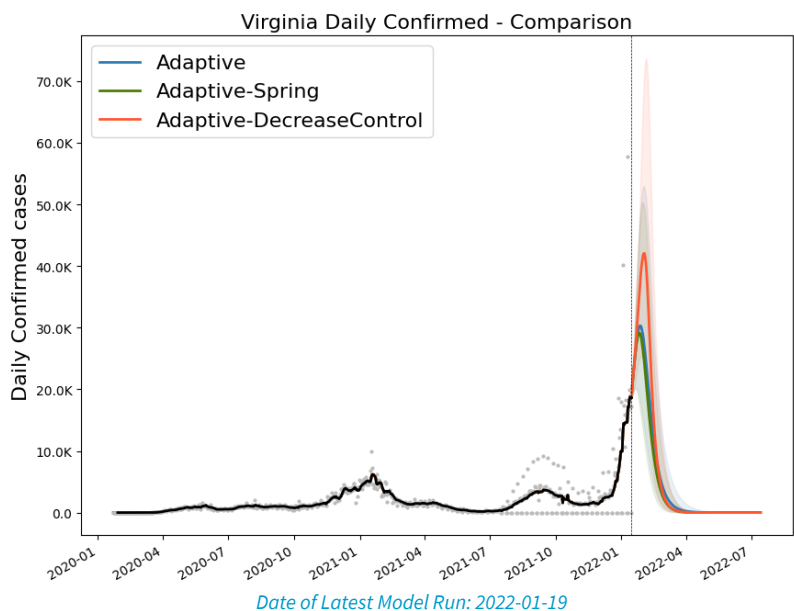
MODEL RESULTS

Updated: The current course "**Adaptive**" scenario (light blue) shows a continued rapid rise in cases. This should peak at around 30,000 daily cases during the week ending on January 30th and be followed by a quick decline.

The "**Adaptive-Spring**" scenario (green) is very similar, peaking at 28,500 cases per day in the same week as the Adaptive scenario. However, the quicker decline in case rates results in 105,000 fewer cases by April.

The "**Adaptive-DecreaseControl**" delays the peak until February 6th and inflates it to roughly 40,000 daily cases. This results in an additional 200,000 cases in February.

Please do your part to slow this wave. [Practice good prevention](#), including indoor masking, social distancing, self-isolating when sick, and [get vaccinated and boosted](#) when eligible.



TROUBLE WITH TESTING

COVID-19 has a number of damaging characteristics, but one of the most troubling has been asymptomatic spread. Usually, people with symptoms of a disease will avoid spreading it or isolate completely. With COVID-19, many people spread the virus without ever knowing they had it. This facilitated global spread and has stymied attempts to contain the virus by focusing on the infected alone.

Asymptomatic spread also makes it more difficult to track the virus, as people with no or mild symptoms may not get tested, meaning that many cases go undetected or are detected later. Public health scientists refer to the case ascertainment rate: the share of cases that are detected and appear in the data.

The case ascertainment rate is essential to understand the current state of the pandemic. It is also a key parameter in disease models. Models need some understanding of the number of people spreading the disease as well as the number of people who may have some protection from natural infection. If the case ascertainment rate was stable it may not have much impact on model results. However, the case ascertainment fluctuates based on test availability, access, testing strategy, and other factors. Though valuable for screening, at home test kits have added an additional wrinkle to case ascertainment rates, as the results of these tests may not be reported to health departments.

Case Ascertainment and Peak Omicron

All of these factors are coming together during the Omicron surge. Test supply is constrained, and access remains limited in rural and other underserved communities. The Governor's Office has announced a new [COVID-19 Action Plan](#), including a testing strategy to manage the testing shortage. Meanwhile, at home tests make up an increasing share of the testing market. The bottom line is clear: Omicron is creating an unprecedented number of cases and placing severe strain on Virginia's hospitals, doctors, and nurses. However, it is increasingly difficult to estimate the case ascertainment rate. From a modeling perspective, this makes it difficult to project the date and level of Omicron's peak.

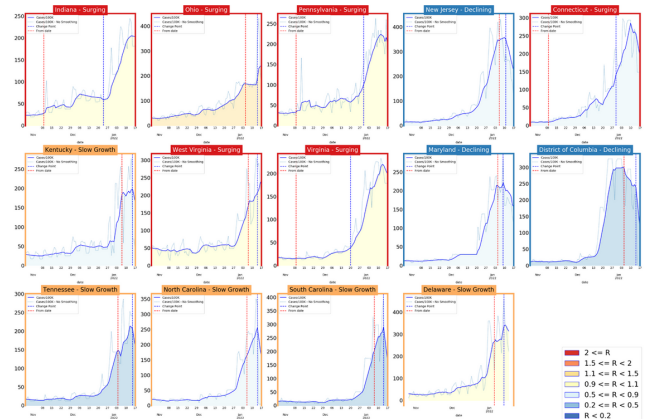
Currently, COVID-19 cases are plateauing - or even declining - in several states, and in some regions of Virginia. This fits the pattern of rapid rise and decline seen in South Africa and other countries hit early by the Omicron variant. However, because of some case ascertainment challenges, it becomes more difficult to know exactly when the peak has been reached in these areas. Under the current course, the model projects that the Omicron surge will peak within the next seven to ten days. However, the "Adaptive-DecreasedControl" scenario shows that the Omicron peak could extend into February and create substantially more cases than currently projected.

Peak Omicron

Regardless of when exactly the peak occurs, it is important to remember that case levels will remain high for several weeks afterwards. Even if the Omicron surge declines as quickly as it rose, half of Omicron cases will occur after the peak. Omicron does not appear everywhere at once, and rural areas of Virginia are likely to experience surges later than urban areas. Please do your part to slow this wave. Practice good prevention, including indoor masking, social distancing and self-isolating when sick. Vaccination is the best protection against severe disease, hospitalization, and death. Get [vaccinated and boosted](#) when eligible.



Virginians line up at a COVID-19 testing event organized by The Urban League of Hampton Roads, The Virginia Office Of Diversity, Equity and Inclusion, Chesapeake Regional Healthcare, and Chesapeake Health Department in June 2020. Source: [The Virginian-Pilot](#)



Confirmed case growth is slowing or declining in several of Virginia's neighboring states and in the DC metro area.